Pond Possibilities

VOLUME 6 - ISSUE 1 WINTER 2005

THE NEWSLETTER OF THE MANCHESTER URBAN PONDS RESTORATION PROGRAM

INVASIVE PLANT TREATED AT CRYSTAL LAKE

Above and Below: Mike Morrison applies an herbicide treatment on an invasive Phragmites stand at Crystal Lake. Photos by Art Grindle

For several years the non-native invasive plant, Common Reed (*Phragmites australis),* has been encroaching the Crystal Lake shoreline. *Phragmites* invades wetland and shoreline areas and displaces beneficial native plant species, such as Cattail, rushes, and sedges, and alters the natural biodiversity of the area. A native of Europe, *Phragmites* rapidly overtakes areas were it is introduced because it has no natural predators to keep the population "in check". As this happens, the impacts on recreation, as well as natural wildlife habitat, can become threatened.

On September 13th, Municipal Pest Management Services applied an herbicide treatment (Glyphosate, trade name *Rodeo*) on the infested areas of Crystal Lake. Rodeo is similar to the household herbicide *Roundup* and is comprised of a concentrated salt. *Rodeo* quickly breaks down to its raw constituents (carbon dioxide, nitrogen, phosphorus and water) as soon as it contacts water, making it safe for plant eradication in aquatic situations.

Even though the herbicide was only sprayed on *Phragmites* stems, a second treatment may be required next year. A 2005 permit application to the N.H. Department of Agriculture is being written. The Crystal Lake Preservation Association performed the same type of treatment around the lake in 1997. That treatment managed the infestation from spreading for about 5 years. A long-term treatment plan should be developed and implemented with the cooperation of the Crystal Lake Preservation Association, with the goal of complete *Phragmites* eradication.

The dead stalks will be cut and burned after ice-in this winter. This will remove the seed stock from the site and the nutrient-rich decaying plant material from entering and polluting the lake water.

An area of Phragmites was also dredged near the parking lot drainage entrance into the Crystal Lake 1) Area of Phragmites in lake before dredging; 2) During dredging; 3) Dewatering Phragmites pile after dredging; 4) Area of Crystal Lake free of Phragmites after dredging. Photos by Manchester EPD.

INVASIVE PLANT ERADICATED AT NUTTS POND

Photo courtesy of Amy Smagula, NHDES

During a pond survey in 2001, staff from the Urban Ponds Restoration Program identified an exotic aquatic weed, Brazilian Elodea (*Egaria densa*), growing along the shoreline of Nutts Pond. This was the first confirmed occurrence of this plant in New England waters. *Egaria densa* is an extremely invasive aquatic plant (similar to variable milfoil) that rapidly outcompetes native submerged aquatic vegetation and radically alters aquatic habitat.

Although it is listed as illegal to purchase and sell in New Hampshire, it can sometimes be found available in aquarium and pet stores. In this case, an unwanted aquarium was most-likely dumped into Nutts Pond in 2000 allowing the plant to colonize approximately 80% of the shoreline by 2001. With funding from the NH Department of Environmental Services, Nutts Pond was treated by Lycott Environmental with an aquatic herbicide in June 2003. Signs were also posted at the boat launch.

Aquatic herbicide treatment at Nutts Pond. Photo by Jen Drociak

During the summer of 2004, only 2 individual *Egaria densa* plants were detected in, and removed from, Nutts Pond. Thus, the treatment seems to be a success! Ken Warren, Aquatic biologist responsible for aquatic weed control at NHDES stated that "The early detection of this invasive plant by the Manchester Urban Ponds staff allowed for a successful herbicide treatment of the pond". Warren further stated that "Left undetected this troublesome South American weed would have infested other nearby urban ponds as well as other waterbodies within the state." Staff from UPRP will continue to monitor Nutts Pond to ensure that this invasive weed does not make a comeback.

FALL POND CLEAN UP RESULTS

Another successful season of volunteer pond clean up events was completed in October 2004. For the last five years, the Urban Ponds Restoration Program has hosted clean up events at each of the seven urban ponds in the City. Clean ups were held at Maxwell, Stevens, McQuesten and Nutts Ponds. Twelve volunteers spent 38 volunteer hours to retrieve 47 bags of trash (approximately 500 pounds) and other debris from the ponds. This included 14 tires, 2 bikes and several other car parts. This compares with the spring 2004 cleanups which generated 26 volunteers, 148 volunteer hours, and 136 bags of trash. Many thanks to our dedicated volunteers and to the Manchester Highway Department for picking up and weighing the trash!

Gail Trimbur and Liz Jestude help remove a motorcycle frame that was dumped at McQuesten Pond. Photo by Art Grindle.

Thank you to our fall volunteers: Mike Dalbec, Marty Gavin, Jen Drociak, Joan Gillis, Andrea Hoban, Liz Jestude, Whitey LeBlanc, Paul Normand, Erin O'Leary, Jean Stefanik, Gail Trimbur, and Claude Venn!

Save the Dates! Spring Clean-Up Events: Maxwell Pond: 4/16; McQuesten Pond: 4/23; Stevens Pond: 4/30; Dorrs Pond: 5/7 and Nutts Pond: 5/14. All cleanups are on Saturdays from 9-12. Raindates are on Sundays. For more information call (603) 624-6450.

DORRS POND & CRYSTAL LAKE TRIBUTARY WORK COMPLETED

Urban stormwater runoff is the most challenging issue facing Manchester ponds today. One tributary at a time, we are treating these sources of untreated runoff. The most recent treatment projects were completed at Dorrs Pond and Crystal Lake.

The east side of Dorrs Pond is heavily developed with residential and commercial land uses. This area drains into a tributary that has contributed pollution to the pond for many years. During the summer/fall of 2004 the three drain lines that feed this tributary have been retrofitted with settling chambers to reduce sedimentation of the pond. Nutrients such as nitrogen and phosphorus are attached to sediment particles, so by reducing sediment, nutrient loading is also reduced. After the stormwater flow exits the chambers, it enters the tributary, which has been altered to further clean the runoff. Large rip-rap was added to reduce flow velocity. Downstream from the rip-rap, a system of biologs and wetland plantings will allow more runoff polishing and nutrient uptake.

Thus far, the system is working well. Installation of these best management practices should greatly reduce the pollutant load the pond receives after each rainfall, making Dorrs Pond a cleaner aquatic system for all to enjoy.

A) Brook Channeling; B & C) Biologs in Brook Channel. Photos courtesy of Rob Robinson – Manchester EPD

During the same time, best management practices (BMPs) were installed at two key inlets to Crystal Lake. One location is at the City beach on Bodwell Road. Prior to this project, stormwater runoff (contaminated with sediment and other constituents) would flow down gradient from the entrance road to the storm drain network and straight into the lake. To prevent this, the sides of the entrance road were stabilized with filter fabric and crushed stone with perforated pipe drainage systems under them. Deep sump catch basins replaced the existing catch basins and the underground stormwater pipe leading from the parking area to the lakeshore was removed to be replaced by a grassed drainage swale. These measures combined have greatly reduced to volume of runoff that reaches the catch basin network under the parking area and cleaned up any runoff that reaches the lake.

UPCOMING POND RESTORATION PROJECTS

With three urban pond restoration projects completed, the UPRP has selected additional projects to implement over the next year. The three completed restoration projects include stormwater treatment on two Crystal Lake inlets and similar stormwater treatment on a tributary at Dorrs Pond.

One of the additional restoration projects to be implemented includes stormwater treatment at two inlets to Nutts Pond. These two inlets drain large surrounding urbanized areas and contribute significant amounts of polluted runoff (such as phosphorus, nitrogen, sediment, gasoline constituents, bacteria, etc) to the pond. Engineering designs for best management practices at these sites will be completed over the winter. Other projects that are being considered are boat launch reconstruction and boardwalk/trail construction at Stevens Pond, boardwalk/trail construction at Maxwell Pond, and possible sediment dredging and bank stabilization at Pine Island Pond. Possible future projects at all ponds are categorized in areas such as water quality improvement, outreach/education, recreation, and land preservation.

FUTURE OF MAXWELL POND/BLACK BROOK DAM DISCUSSED AT SECOND PUBLIC INFORMATIONAL MEETING

Aerial of Maxwell Pond, 2004.
Photo courtesy of Pete Walker, VHB.

The City of Manchester *(Lands & Buildings Committee and Mayor & Board of Aldermen*) is faced with making a timely and informed decision about whether to repair and maintain, or remove the dam at Maxwell Pond. The dam is currently in disrepair and no longer fulfills its historical function (ice harvesting in the 1900s).

Maxwell Pond Dam has deteriorated to the point that it needs an estimated $60,000 in repairs. On September 13, 2002 Manchester received an order to repair or remove the dam from the NH Department of Environmental Services, which oversees dam safety. Maxwell Pond does not fulfill a commercial, water supply, or flood control function. Additionally, many of its recreational and aesthetic benefits were lost due to the transport of sediment from upstream and the growth of vegetation around its edges. In 1954 the pond had a maximum depth of 8 feet; today its maximum depth is just 4 feet. Dredging would be required to return the pond to its previous condition. Preliminary estimates indicate that it would cost approximately $1,300,000 to dredge the pond. This would be in addition to the $60,000 to repair the dam, plus ongoing maintenance costs.

Removing the dam would cost an estimated $50,000. While dam removal would not restore swimming, skating and other uses once provided by the pond, it would offer other recreational and aesthetic benefits instead, such as stream-side trails and views of bedrock cascades. Removing the dam would also relieve the City of any future financial and legal liabilities related to the dam, as well as restore Black Brook to its natural free-flowing condition and improve stream ecology, opening up approximately 6 miles of unimpeded anadromous fish passage. Federal and state grant funding is available for dam removal.

Maxwell Pond was created when a dam was built on Black Brook in 1900. The pond, located on Front Street just south of Dunbarton Road, was reportedly named for A.H. Maxwell, owner of the Manchester Coal & Ice Company during the 1930s and 1940s. The company sold ice year-round from its icehouse next to the pond by keeping it cold with hay bales. Until the late 1950s, Maxwell Pond was also a popular place for swimming, picnicking, and fishing. In the winter, the pond provided a spot for skating, bonfires and hockey games. It was also once considered for a secondary municipal water source for the City of Manchester, but the idea was apparently abandoned sometime in the 1960s. Today the dam is owned by the City and managed by the Manchester Parks and Recreation Department.

To date, members of the Manchester Urban Ponds Restoration Program, Manchester Conservation Commission, Parks & Recreation Department, NH Department of Environmental Services, and Trout Unlimited have held two public informational meetings *(May 22, 2003 and January 20, 2005)* and have attended two Lands & Buildings Committee meetings *(August 10th and November 15th 2004)* to provide details on the repair or removal of the dam including costs, benefits and funding sources. A question & answer session and public comment period followed both public informational meetings. Next steps include meeting with the Lands & Buildings Committee again for a recommendation to the full Mayor and Board of Alderman.

1A) Maxwell Pond Dam; 1B) Photo rendering post dam removal; 2A) Maxwell Pond; 2B) Photo rendering post dam removal.
Photos courtesty of Jim MacCartney, Trout Unlimited.

LAKE ASSOCIATION FORMED AT PINE ISLAND POND

Photo by Art Grindle

The Pine Island Pond Environmental Society (PIPES) was formed in September 2004 as a means for area residents to help preserve the quality of life in their neighborhood. The group's purpose is to foster the protection and preservation of Pine Island Pond. The PIPES Political Action Committee currently has 18 members and continues to grow. PIPES has been motivated by a number of issues including declining water quality of Pine Island Pond, impacts from unscheduled draw-downs, land development, invasive aquatic plants, and many others. The unscheduled draw-down that drained the pond last June energized pond residents to take action. Certain members of PIPES have been working for pond conservation for quite some time conducting water quality monitoring and historical research. Volunteers at Pine Island Pond have been involved with the NH Volunteer Lakes Assessment Program (a program coordinated by NH DES) for five years. For this program, volunteers assist staff from the Manchester Urban Ponds Restoration Program in collecting monthly pond samples for water quality tracking.

Lake associations serve several functions including:

- Developing a partnership with lake neighbors.
- Gaining awareness of neighbors' lake interests.
- Developing a communications network for sharing lake news.
- Raising awareness of lake issues in the community.
- Launching fund raising events and applying for grants.
- Evolving a long-range lake management plan.
- Acting as a support group for members.
- Gaining strength in numbers. The group's opinions and needs can be constructively represented to local government officials or agencies.
- Gathering information and presenting educational programs for membership and those living near the lake.
- Conducting data collection on a broad range of lake concerns (water quality, development, lake use conflicts).
- Gaining a historical perspective from long-time residents.
- Networking with other lake associations.

Other lake associations in Manchester include the Dorrs Pond Preservation Society (established in 1996) and the Crystal Lake Improvement Association (established in 1993). Both of these associations have been successful in obtaining federal funding to address in-lake water quality issues as well as watershed best management practices.

For more information on Pine Island Pond visit our website at www.ManchesterNH.gov/UrbanPonds.

STORM DRAIN STENCILING PLANNED AT PINE ISLAND POND

To help raise awareness of non-point source pollution sources, volunteers from the Pine Island Pond Environmental Society (PIPES) will be stenciling the storm drains along Pond Drive this spring. Materials and assistance will be provided by the City Highway Department and the Urban Ponds Restoration Program. Members of PIPES hope that stenciling storm drains will educate others that what enters these drains ultimately enters into the pond. It is also hoped that with this effort people in the neighborhood will realize that there is a direct connection between what they do in their yards and driveways and the health of the pond. If you'd like to be involved, contact Art Grindle at 624-6450.

Example of storm drain stencil.
Photo Courtesy of Rick Cantu

POND POSSIBILITIES AVAILABLE ELECTRONICALLY

Would you like to receive this publication electronically instead? The UPRP has an electronic newsletter mailing list, and *Pond Possibilities* can be sent to you in PDF format. If you would rather receive this mailing electronically, please send an e-mail to Jen Drociak at urbanponds@yahoo.com

POND POSSIBILITIES

Pond Possibilities is a bi-annual publication of the Manchester Urban Ponds Restoration Program.

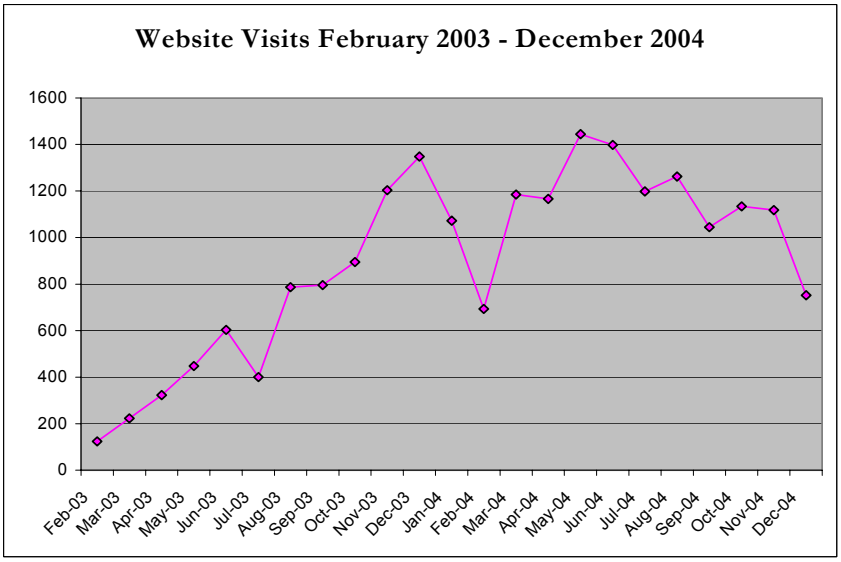
Art Grindle – **Program Coordinator**

Jen Drociak –Editor & Layout

Conservation Commissioners
Michael Poisson – Eric Skoglund
Jen Drociak – JoAnn O'Shaughnessy
Kathleen Neville – Todd Connors
Marty Gavin

1 City Hall Plaza – Manchester NH 03103
(603) 624-6450
agrindle@ci.manchester.nh.us
www.manchester.nh.gov/UrbanPonds

WEBSITE VISIT TRENDS & NEW ONLINE PUBLICATIONS



Recent additions to the UPRP website include new pond-specific fact sheets *(includes location, watershed area, waterbody size, volume of water, average depth, maximum depth, shoreline length, flushing rate, uses, amenities, local legends, etc)*, and Word Finds and Crossword Puzzles. These can be found under "Publications and Media" on the UPRP homepage (www.manchesternh.gov/UrbanPonds). As always, up-to-date water quality data, project status and pond events are listed there as well.

MANCHESTER URBAN PONDS RESTORATION PROGRAM

1 City Hall Plaza
Manchester, NH 03101
(603) 624-6450
www.manchesternh.gov/UrbanPonds

MAIL TO: